

## Educational Materials from the U.S. Geological Survey

As the Nation's largest water, earth, and biological science and civilian mapping agency, the U.S. Geological Survey (USGS) provides some of this science information as educational material. The product line includes a variety of teaching packets, booklets, posters, fact sheets, CD-ROMs, and Web sites.

Described below are products designed for K-12 teachers. This list starts with a review of two main USGS education sites followed by products grouped according to thematic topics. At the end of each product description, information is provided for ordering the product or accessing it on the Web.

Some of the publications are currently out of print. Such publications will be noted as "WEB ONLY."

### USGS Learning Web

The USGS Learning Web, [www.usgs.gov/education](http://www.usgs.gov/education), is dedicated to K-12 education and life-long learning. Students can find handy research tools, such as glossaries covering volcanoes, mapping, hydrologic terms, and plant species; they can also find help with homework assignments. Teachers and homeschoolers can find lesson plans with innovative activities covering caves, environmental and global change concerns, and interpretation of maps. "Explorers" can find their own areas of special interest, such as understanding natural hazards, investigating careers in earth science, and connecting to real-time information on earthquakes, volcanic activities, and water. Additional trivia games, paper models and animations, and coloring pages are also available on the Learning Web.

All of the USGS teaching packets are available online through the Learning



Web at [interactive2.usgs.gov/learningweb/teachers/lesson\\_plans.htm](http://interactive2.usgs.gov/learningweb/teachers/lesson_plans.htm). Two of the online teaching packets, *Volcanoes!* and *Exploring Caves*, have posters that you can purchase.

**Map Adventures**—This packet is appropriate for grades K-3. Students will learn basic concepts for visualizing objects from different perspectives and how to understand and use maps. The packet includes a two-sided color poster, teacher information, seven lesson plans, and two activity sheets.

*WEB ONLY*

**Exploring Caves**—This K-3 teaching packet covers the related subjects of geology, cartography, and hydrology in a lighthearted story about Bat, who finds two lost children in a cave and teaches them various lessons as he guides them to safety. The packet includes a large, colorful poster and an instructional book for teachers that contains the read-aloud story, lesson plans, and student activity sheets.

*WEB ONLY*

*Exploring Caves* poster. 16634\*

**What Do Maps Show?**—This packet for middle school includes a two-sided color poster with four accompanying lesson plans for learning geography and developing mapreading skills. It also includes three maps and four activity sheets.

16630

**Global Change**—This packet is appropriate for grades 4-6. It covers four themes: time, change, natural cycles, and the Earth as home. It includes a two-sided color poster, a teacher's guide, and three activities. Each activity includes background material, an experiment, three lesson plans, and suggestions for further reading.

16629

**Volcanoes!**—This teaching packet for grades 4-8 answers fundamental questions about volcanoes through the story of the 1980 eruption of Mount St. Helens. Included are a two-sided color poster, a teaching guide with glossary and bibliography, and six lesson plans with timed activities and activity sheets.

*WEB ONLY*

*Volcanoes!* poster. 112440\*

**Exploring Maps**—This interdisciplinary set of materials on mapping for grades 7-12 is designed to aid in teaching basic mapmaking and mapreading skills. It includes a teaching guide, four activity sheets, and two double-sided posters.

*WEB ONLY*

**Land and People: Finding a Balance**—This teaching packet for high school challenges students to examine current environmental issues in three different regions and helps them prepare to find a balance between humans and the environment in the future. It contains a teaching guide, a colorful poster, and separate activities. The student materials

\*Sales item. Items with no asterisk are either free print or Web publications.

include a reading about each region, a focus question that leads to role-playing activities, and scientific data about the region.

16632

**Scientists in Action**—Newsletter for middle and high school students on careers in the natural sciences. Describes careers by providing narratives of professional scientists at work. From mapping the planets to sampling the ocean floor, from protecting wildlife to forecasting volcanic eruptions, budding scientists can explore these unique career opportunities.

16643

## National Atlas

Another Web site of great interest to teachers is the National Atlas of the United States® at **nationalatlas.gov**®. The USGS and its partners are cooperatively producing an Atlas that is intended as an essential reference for all computer users. In addition to providing high-quality small-scale maps, the Atlas includes national geospatial and geostatistical data sets, such as soils, county boundaries, and watersheds. Crime patterns, population distribution, and incidence of disease are examples of geostatistical data. The Atlas includes easy-to-use online interactive maps, multimedia maps, and printable maps. The **nationalatlas.gov**® Web site is a wonderful instrument of education and a research tool with accurate and reliable Government information.



## Earth Hazards

**Earthquakes**—This 20-page booklet explains the nature and causes of earthquakes. It describes techniques used to detect, record, measure, and forecast seismic disturbances.

[pubs.usgs.gov/gip/earthq1/](http://pubs.usgs.gov/gip/earthq1/)  
WEB ONLY

**Earthquakes for Kids & Grownups**—USGS Earthquake Hazards Program's

Earthquakes for Kids Web Site. Includes information on Earth structure, plate tectonics, and earthquake preparedness through pictures, animations, and online interactive puzzles for teachers and K-12 students.

[earthquake.usgs.gov/4kids/](http://earthquake.usgs.gov/4kids/)

### Earthquakes In and Near the Northeastern United States, 1638-1998

—This thematic map, I-2737, was produced by the National Earthquake Information Center and shows earthquake activity in the northeastern United States since the arrival of the early settlers in that region. Eyewitness accounts, photographs of damage, and newspaper headlines are included. A companion fact sheet with the same title can also be requested.

28898\* (map)

16713 (fact sheet)

[greenwood.cr.usgs.gov/pub/i-maps/i-2737/](http://greenwood.cr.usgs.gov/pub/i-maps/i-2737/) (map)

[greenwood.cr.usgs.gov/pub/fact-sheets/fs-006-01/](http://greenwood.cr.usgs.gov/pub/fact-sheets/fs-006-01/) (fact sheet)

### Eruptions of Mount St. Helens: Past, Present, and Future

—This 56-page booklet highlights the eruptive history of this composite volcano, reviews its activity since its awakening in 1980, and speculates about its behavior in the future.

16383\*

[pubs.usgs.gov/publications/msh/](http://pubs.usgs.gov/publications/msh/)

**The San Andreas Fault**—This 17-page booklet defines the San Andreas Fault and also discusses earthquake magnitude and intensity.

[pubs.usgs.gov/gip/earthq3/](http://pubs.usgs.gov/gip/earthq3/)

WEB ONLY



### Future Quakes—Unlocking the Mysteries of Bay Area Earthquake Faults

—This half-hour video features USGS Coastal and Marine Geology earthquake-hazard research in the San Francisco Bay area. It describes how scientists conducted seismic studies to determine whether the San Andreas and Hayward faults are connected, as well as other studies including a project designed to make shaking-intensity maps available to emergency personnel within 2 minutes of a Bay Area earthquake.

*Open-File Report 99-519\**

**Volcanoes of the United States**—This 44-page booklet describes the principal volcanoes that have erupted during the last few hundred years in Hawaii, Alaska, and the Cascades Mountain Range. It also summarizes recent events at active calderas in California and Wyoming.

16488

[pubs.usgs.gov/gip/volcus/](http://pubs.usgs.gov/gip/volcus/)

**Volcanoes**—This 45-page booklet presents a summary of the nature of the Earth processes that create common types of volcanoes around the world, along with an introduction to the techniques of volcano-monitoring research.

[pubs.usgs.gov/gip/volc/](http://pubs.usgs.gov/gip/volc/)

WEB ONLY

### Volcano Resources for Educators

—USGS Volcano Hazards Program. This Web site gives a variety of information on volcano publications, videos, and raw footage of volcanic eruptions.

[volcanoes.usgs.gov/educators.html](http://volcanoes.usgs.gov/educators.html)

### Eruptions of Hawaiian Volcanoes:

**Past, Present, and Future**—This 54-page booklet focuses on the volcanic history of the Hawaiian Islands with dramatic color photographs and diagrams and informative text on Hawaii's active shield volcanoes, Mauna Loa and Kilauea.

[pubs.usgs.gov/gip/hawaii/](http://pubs.usgs.gov/gip/hawaii/)

WEB ONLY

## Water

Each poster listed below was originally available in two versions—grade school and middle school. Several of the

posters are currently out-of-print. Six posters of the nine-poster set can be viewed at the following Web site: [water.usgs.gov/public/outreach/OutReach.html](http://water.usgs.gov/public/outreach/OutReach.html). The front side of each poster has a colorful cartoon graphic depicting the topic of the poster. The back sides of the posters contain educational activities, definitions, and interpretive questions concerning the poster topics. The educational materials on the back determine the appropriate grade level. The posters can be joined to create a wall mural. Black-and-white posters do not have activities printed on the back side and are coloring exercises for children in grades K-5.

The National Science Teachers Association has made these water posters available in "Water Matters," a three-volume set that can be purchased as individual volumes or as the series set. Each volume comes with six posters (three with text geared for elementary students and three for middle school) plus teacher's guides with activities. More information on purchasing can be found at [store.nsta.org/products.asp?dept=39&pagenumber=2](http://store.nsta.org/products.asp?dept=39&pagenumber=2), or by calling 1-800-277-5300.

**Water: The Resource That Gets Used and Used and Used For Everything!**—Shows 12 uses of water, from mining to transportation. The flow of water is depicted from the mountains, through a reservoir, and past urban, rural, and industrial settings where various uses are featured. This poster is also available in Spanish.

16600 (middle school)

16557 (black-and-white Spanish version)  
Web

**How Do We Treat our Wastewater?**—Illustrates the process by which wastewater is treated in cities, small towns, and rural areas.

16602 (grade school)

16603 (middle school)

Web

**Wetlands: Water, Wildlife, Plants, and People!**—Defines general types of wetlands, demonstrates how wetlands are depicted, and teaches how wetlands are

beneficial. The diversity of plants and animals in wetlands is also shown.

WEB ONLY

#### **Ground Water: The Hidden**

**Resource!**—Displays the movement of water in a ground-water system.

WEB ONLY

**Water Quality . . . Potential Sources of Pollution**—Features human activities associated with different sources of water pollution. It also shows the movement of waters between surface- and ground-water systems.

WEB ONLY

#### **Navigation: Traveling the Water**

**Highways!**—Highlights the different kinds of vessels, port facilities, structures, and equipment needed for commercial operations on rivers and in coastal harbors. It was designed to introduce students to the many aspects of navigation.

16612 (middle school)

Web



#### **Hazardous Waste: Cleanup and**

**Prevention**—Shows various hazardous waste sites, different types of cleanup methods used on these sites, and how hazardous waste moves once it is released into the environment.

16614 (grade school)

16615 (middle school)

16623 (color Spanish version)

**Watersheds: Where We Live**—Depicts three watersheds, identifying different physical features and management options within each watershed. The

poster also depicts flooding and the importance of flood plains.

16617 (grade school)

16618 (middle school)

16621 (color Spanish version)

**Oceans-Coastal Hazards: Hurricanes, Tsunamis, Coastal Erosion**—Describes several natural processes or events that can change the shape of the coast and affect nearby environments. Designed as a contribution to the Year of the Ocean.

16592 (grade school)

16593 (middle school)

16591 (black-and-white version)

16622 (color Spanish version)

#### **Water Science for Schools**—USGS.

Information is given at this Web site on the many aspects of water, along with pictures, data, maps, and an interactive center where students can express opinions and test their water knowledge.

[ga.water.usgs.gov/edu/](http://ga.water.usgs.gov/edu/)

**What is Ground Water?**—Explains how water gets into the ground.

Illustrates and explains associated terms, such as water table, aquifer, permeability, and porosity.

[water.usgs.gov/pubs/FS/OFR93-643/](http://water.usgs.gov/pubs/FS/OFR93-643/)

WEB ONLY

**Ground Water**—This 17-page booklet describes ground water, how it occurs, and its quality.

16433

[capp.water.usgs.gov/GIP/gw\\_gip/](http://capp.water.usgs.gov/GIP/gw_gip/)

#### **Ground Water and the Rural Homeowner**—This 36-page booklet provides the rural homeowner with a basic description of ground water and problems one may expect to encounter when building, such as contamination from septic systems and lowered well-water levels.

16509

#### **Science in Your Watershed**—USGS.

This Web site helps you find scientific information organized on a watershed basis. It provides a foundation for characterizing, assessing, analyzing, and maintaining the status and health of a watershed.

[water.usgs.gov/wsc/](http://water.usgs.gov/wsc/)

**Floods and Flood Plains**—Describes flood plains, factors that influence when or where floods occur, and how flood damage can be reduced.

[water.usgs.gov/pubs/FS/OFR93-641/](http://water.usgs.gov/pubs/FS/OFR93-641/)  
*WEB ONLY*

**Drought**—Provides information on what droughts are, where they usually occur in the United States, and what can be done to solve water problems during periods of drought.

[water.usgs.gov/pubs/FS/OFR93-642/](http://water.usgs.gov/pubs/FS/OFR93-642/)  
*WEB ONLY*

**USGS Tracks Acid Rain**—Explains what acid rain is, how it is formed, and what its effects are. Also gives some information on what can be done to help control acid rain.

17526

[bqs.usgs.gov/precip/arfs.htm](http://bqs.usgs.gov/precip/arfs.htm)

**Acid Rain and Our Nation's Capital: A Guide to Effects on Buildings and Monuments**—This 35-page booklet focuses on acid rain and its impact on our Nation's capital. The booklet defines acid rain, explains what effects it has on marble and limestone buildings, and shows, through a walking tour, some of the places in Washington where you can see the impact of acid precipitation.

16506

[pubs.usgs.gov/gip/acidrain/](http://pubs.usgs.gov/gip/acidrain/)

## Plants and Animals

**USGS BRD Kid's Corner**—USGS Biological Research Discipline. This Web site includes games, coloring pages, stories, and fun projects on living things for preschoolers on up.

[biology.usgs.gov/features/kidscorner/kidscnrn.html](http://biology.usgs.gov/features/kidscorner/kidscnrn.html)

**National Biological Information Infrastructure Teacher Resources**—USGS NBII. This Web site provides educators, parents, and students of all ages with access to online resources that emphasize the teaching of biology, biodiversity, and ecology. Topics include reptiles and amphibians, botany, and activities in your State.

[www.nbii.gov/education/](http://www.nbii.gov/education/)

**Status and Trends Publications of the Department of the Interior**—This CD-ROM contains two publications:

"The Status and Trends of the Nation's Biological Resources" and "Our Living Resources." The first publication, written in nontechnical language and released in 1999, synthesizes current information on the status and trends of our biological resources with a historical perspective of ecosystems across the country to assess how the Nation's resources are changing. The second publication, published in 1995, contains almost 200 articles describing inventory and monitoring efforts that measure the distribution, abundance, and health of the Nation's plants, animals, and ecosystems.

18905\*

[biology.usgs.gov/science/publications.html](http://biology.usgs.gov/science/publications.html)

**FrogWeb**—NBII/USGS. This Web site focuses on the recent amphibian declines and deformities. Students are encouraged to adopt a frog pond and join the Frog Force to help monitor frog populations.

[www.frogweb.gov/](http://www.frogweb.gov/)

**The Children's Boreal Toad Site**—USGS Midcontinent Ecological Science Center. This Web site provides information, photographs, and illustrations of the life history of the boreal toad, an endangered species in the State of Colorado.

[www.mesc.usgs.gov/resources/education/borealtoad/borealtoad.shtml](http://www.mesc.usgs.gov/resources/education/borealtoad/borealtoad.shtml)

**A Field Guide to the Reptiles and Amphibians of Coastal Southern California**—USGS/BRD/Western Ecological Research Center. This Web site includes information on several species of salamanders, lizards, turtles, snakes, and frogs and toads in Southern California, with photographs, descriptions, and a glossary.

[www.werc.usgs.gov/fieldguide/](http://www.werc.usgs.gov/fieldguide/)

**USGS South Florida Information Access (SOFIA) Kid's Page**—Learn about South Florida at this Web site. Explore its ecosystems and check out the critter coloring pages while learning about South Florida's water and the

unique animals and insects that make their homes there.

[sofia.usgs.gov/virtual\\_tour/kids/](http://sofia.usgs.gov/virtual_tour/kids/)

**The Children's Butterfly Site**—USGS Midcontinent Ecological Science Center. This Web site was developed for grades 4-6. Information is given on moths and butterflies, along with a coloring page, frequently asked questions and answers, a gallery of butterfly photographs, and links to other sites.

[www.mesc.nbs.gov/resources/education/butterfly/Butterfly.shtml](http://www.mesc.nbs.gov/resources/education/butterfly/Butterfly.shtml)

**Black Bears and Songbirds of the Lower Mississippi River Valley**—This interactive, multimedia CD-ROM informs students of the importance of forested wetlands and the animals that depend on them. It features audio and video clips of wildlife and research biologists. It is available from the Coastal Wetlands Planning, Protection and Restoration Act/USGS National Wetlands Research Center. A teacher's guide is available online. Please request online at:

[lacoast.gov/freestuff/cd-roms/blackbears.htm](http://lacoast.gov/freestuff/cd-roms/blackbears.htm)



**Louisiana Wetlands Functions and Values**—This CD-ROM, geared for students ranging from the 6th to the 12th grades, includes a variety of educational presentations and ideas that cover wetlands functions and values and coastal wetlands land loss and restoration. It also contains a wetlands quiz. This CD-ROM is available from the Coastal Wetlands Planning, Protection and Restoration Act/USGS National Wetlands Research Center. Please request online at:

[lacoast.gov/freestuff/cd-roms/functions.htm](http://lacoast.gov/freestuff/cd-roms/functions.htm)

**Explore Coastal Louisiana**—This interactive CD-ROM, designed for the general public, explores many of the issues that affect the coastal wetlands of Louisiana. It is available from the Coastal Wetlands Planning, Protection and Restoration Act/USGS National Wetlands Research Center. A teacher's guide is available online. Please request online at:  
[lacoast.gov/freestuff/cd-roms/cajun.htm](http://lacoast.gov/freestuff/cd-roms/cajun.htm)

**Lacoast Kids' Corner**—Maintained by USGS National Wetlands Research Center. This Web site features online coloring books and bird and animal identification games featuring Louisiana coastal creatures.  
[www.lacoast.gov/kids/index.htm](http://www.lacoast.gov/kids/index.htm)

**The Fragile Fringe**—USGS National Wetlands Research Center. This Web site features the "Fragile Fringe: A Guide for Teaching About Coastal Wetlands." An introduction is given on wetlands, along with several activities and additional resource lists.  
[www.nwrc.gov/fringe/ff\\_index.html](http://www.nwrc.gov/fringe/ff_index.html)

**Botany for Kids**—NBII/USGS. Learn about plants at this Web site and have fun doing science projects using lichens, fungi, and more.  
[www.nbii.gov/disciplines/botany/kids.html](http://www.nbii.gov/disciplines/botany/kids.html)

**Tree Rings Record 100 Years of Hydrologic Change Within a Wetland**—This four-page fact sheet explores the relevance of examining the annual growth of tree rings in determining what conditions were like in the past decades or even centuries. A study area in New York State is highlighted.  
16989  
[ny.usgs.gov/pubs/fs/fs05797/html2/FS057-97.html](http://ny.usgs.gov/pubs/fs/fs05797/html2/FS057-97.html)

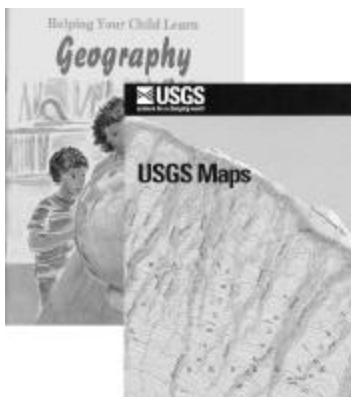
## Maps and Images

**USGS Maps**—This 28-page booklet illustrates and describes types of USGS maps and gives ordering information.  
16486  
[mac.usgs.gov/mac/isb/pubs/booklets/usgsmaps/usgsmaps.html](http://mac.usgs.gov/mac/isb/pubs/booklets/usgsmaps/usgsmaps.html)

**Map Scales**—This fact sheet explains map scales and includes a table comparing the scales of various USGS map series.  
112719  
[mac.usgs.gov/mac/isb/pubs/factsheets/fs01502.pdf](http://mac.usgs.gov/mac/isb/pubs/factsheets/fs01502.pdf)

**Map Projections**—A two-sided poster showing the frontispiece to Gerardus Mercator's *Atlas sive Cosmographicae* on one side and the properties, characteristics, and preferred uses of many historically important projections and of those frequently used today on the reverse side.  
16573 (folded)

**Map Projection Publications**—This fact sheet describes nine USGS publications about map projections.  
[mac.usgs.gov/mac/isb/pubs/factsheets/fs08799.pdf](http://mac.usgs.gov/mac/isb/pubs/factsheets/fs08799.pdf)  
WEB ONLY



**Elevations and Distances**—This 15-page booklet provides tables of information covering elevations of features and distances between points in the United States.  
16419  
[mac.usgs.gov/mac/isb/pubs/booklets/elvadist/elvadist.html](http://mac.usgs.gov/mac/isb/pubs/booklets/elvadist/elvadist.html)

**National Atlas of the United States Maps**—This fact sheet presents a selection of maps originally published in the National Atlas of the United States of America by the USGS in 1970.  
112265  
[mac.usgs.gov/mac/isb/pubs/factsheets/fs08601.pdf](http://mac.usgs.gov/mac/isb/pubs/factsheets/fs08601.pdf)

**Historic Map of Colorado - 1894**—Reproduced by the USGS in cooperation with the Library of Congress, this map,

scaled at approximately 1:500,000, was originally published in 1894 by James McConnell School Supplies of Denver, Colo. This unique bird's-eye view map has incredible detail, and features include relief shading, counties, cities, towns, roads, rivers, valleys, railroads, and elevations of some mountain peaks.  
112161\*  
[rockyweb.cr.usgs.gov/historicmaps/historicmapsfromlca.html](http://rockyweb.cr.usgs.gov/historicmaps/historicmapsfromlca.html)

**Landforms of the Conterminous United States—A Digital Shaded-Relief Portrayal**—A large, digitally produced map illustrating geomorphic and tectonic phenomena of the United States in vivid detail. A 16-page booklet describing the map accompanies it.  
28394\* (map)  
28395\* (booklet)

**Digital Shaded-Relief Image of Alaska**—A large map illustrating the physiographic features of Alaska from the artificial rendering of a digital elevation model. An 11-page booklet describing the map accompanies it.  
28760\* (map)  
28761\* (booklet)

**Topographic Field Trip of Washington, D.C.**—This CD-ROM was designed for middle school students to travel through Washington, D.C. It uses hypermedia to navigate through layers of information and link sounds, graphics, text, animation, and interactivity in a game-like adventure. Students learn how to measure distance and direction, determine latitude and longitude, identify map features, understand digital orthophotos, determine elevations, and examine historical maps. A fact sheet describing the CD-ROM is available online.  
[mac.usgs.gov/mac/isb/pubs/factsheets/fs17899.pdf](http://mac.usgs.gov/mac/isb/pubs/factsheets/fs17899.pdf)  
18908 (Macintosh version free while supply lasts)  
18909\* (Macintosh and Windows 3.1x or 95)

**Finding Your Way with Map and Compass**—This fact sheet explains how topographic maps show distance and direction and how to use a compass.  
16866

*mac.usgs.gov/mac/isb/pubs/factsheets/fs03501.pdf*

**Recreation.Gov**—This Web site offers one-stop shopping for information on recreational opportunities on Federal lands. Allows searching by State, activity, or agency.

*www.recreation.gov*

**USGS TerraWeb for KIDS**—This Web site was designed to help children (K-12) learn about the processes, tools, terminology, and uses of remote sensing.

*terraweb.wr.usgs.gov/kids/*

**Interactive Multimedia Adventures for Grade-School Education using Remote Sensing**—NASA/NBII/USGS. This Web site features the "Adventures of Echo the Bat," a wonderful story about Echo, the baby bat, and what happens when he becomes lost in Arizona. Students learn about remote sensing and the electro-

magnetic spectrum to help find Echo. The teacher's guide includes information on understanding light and biodiversity.

*imagers.gsfc.nasa.gov/*

**Mapping the Solar System**—A two-sided poster with colorful airbrush illustrations of the planets and their satellites on one side and statistical information and geographic feature information on the reverse side.

28635\*

#### **Aerial Photographs and Satellite**

**Images**—This 21-page booklet illustrates various USGS aerial photographs and remotely sensed products.

16554

*mac.usgs.gov/mac/isb/pubs/booklets/aerial/aerial.html*

#### **How to Obtain Aerial Photographs**

This fact sheet includes general information on ordering aerial photographs from the USGS and a checklist to use when ordering.

17099

*mac.usgs.gov/mac/isb/pubs/factsheets/fs08199.pdf*

#### **Looking for an Old Aerial**

**Photograph**—This fact sheet lists sources for obtaining historical aerial

photographs, including the USGS, the National Archives and Records Administration, and the Library of Congress.

*mac.usgs.gov/mac/isb/pubs/factsheets/fs12796.pdf*

WEB ONLY

#### **Helping Your Child Learn**

**Geography**—This 32-page booklet, published in cooperation with the U.S.

Department of Education and the National Geographic Society, is designed to help parents stir children's curiosity about geography. The activities can also be used in the classroom and are designed for children 5-10 years of age.

16522

*www.ed.gov/pubs/parents/Geography/*

The USGS and its partners began work on The National Atlas of the United States of America® in 1997. The National Atlas is designed to promote greater geographic awareness through products that provide easy-to-use, map-like views of our natural and sociocultural landscapes. It includes products designed to stimulate children and adults to visualize, comprehend, and even marvel at the complex relationships among environments, places, and people. Seven published maps are now available.

The published maps, as well as interactive and multimedia maps, can be viewed at **www.nationalatlas.gov/atlasvue.html**.

The Library of Congress has digitized and republished all the maps from the original 1970 National Atlas of the United States. The entire collection of high-quality, full-color atlas maps can be viewed at **memory.loc.gov/ammem/gmdhtml/census3.html**.

#### **Presidential Elections 1789-2000**

Fifty-four election results are depicted from 1789 to 2000. The map shows the electoral votes by political party and State for all the elections, and a more detailed map at 1:11,000,000-scale for the 2000 election shows the winner of the popular vote at the county level.

112283\*

**General Reference Map of the United States**—This map, published at a scale of 1:5,000,000, shows the names of populated places, transportation features, water bodies, forested and urban areas, and physical features.

101517\*

**Forest Cover Types**—Published at a scale of 1:7,500,000 and prepared in cooperation with the U.S. Forest Service, this map depicts major forest cover types overlaid on a shaded-relief map of the United States.

100615\*

**Shaded Relief**—This map, published at 1:10,000,000 scale, covers all of North America. Digital elevation data and computer software were used to render this terrain image with 23 distinct color tones depicting broad elevation ranges. The terrain is "illuminated" from the northwest with a simulated sun angle of 45 degrees.

112733\*

**Hydrologic Units**—This map, published at a scale of 1:3,500,000, depicts a hydrologic system that divides and subdivides the United States into successively smaller river basin units. These subdivisions, or hydrologic units, are used for collecting and organizing hydrologic data. They represent natural and man-made stream-drainage areas.

101515\*

**Federal and Indian Lands**—This map, published at a scale of 1:7,500,000, is color coded to represent the lands of the Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, Department of Defense, Fish and Wildlife Service, Forest Service, National Park Service, Tennessee Valley Authority, Agricultural Research Service, Department of Energy, and Department of Transportation in the United States and Puerto Rico.

100854\*

#### **Principal Aquifers of the United**

**States**—This map, published at a scale of 1:5,000,000, shows the distribution of the major aquifers that supply ground water to the United States, Puerto Rico,

and the U.S. Virgin Islands. Each aquifer is classified as one of six types of permeable geologic material.  
101514\*

The USGS has published ecoregion maps of areas of the United States. On one side, these colorful maps show levels II and IV ecoregions of a specific area and provide descriptions and photographs of each ecoregion. The reverse side contains a summary table of the characteristics of the ecoregions and a bibliography. Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. The following nine ecoregion maps have been published so far.

#### **Ecoregions of North Dakota and South Dakota**

21629\*

[www.npwrc.usgs.gov/resource/1998/nds-deco/ndsdeco.htm](http://www.npwrc.usgs.gov/resource/1998/nds-deco/ndsdeco.htm)

#### **Ecoregions of Western Washington and Oregon**

21630\*

#### **Ecoregions of Indiana and Ohio**

21631\*

#### **Ecoregions of Tennessee**

21632\*

#### **Ecoregions of Montana**

21633\*, 21634\*

#### **Ecoregions of Nebraska and Kansas**

21635\*

**Ecoregions of Utah**—(Stock number not available at time of printing.)\*

**Ecoregions of Alabama and Georgia**—(Stock number not available at time of printing.)\*

**Ecoregions of Idaho**—(Stock number not available at time of printing.)\*

### **Rocks and Images**

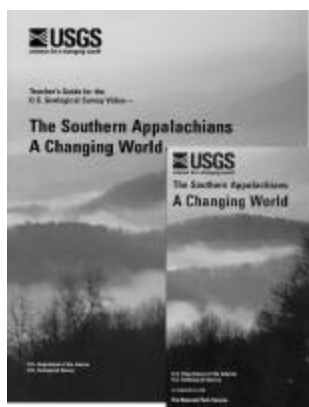
**The Southern Appalachians: A Changing World**—This 25-minute video describes the Southern

Appalachian Mountains and how the geologic events that took place millions of years ago influenced the landscape, climate, soils, and living things that can be seen there today. Spanning a vast area from Virginia to Georgia, the Southern Appalachians are some of the oldest mountains on Earth. Molded and shaped over eons by volcanism, erosion, glaciation, and other geologic forces, these mountains are known worldwide for their unusual beauty and rich biological diversity. The 16-page teacher's guide summarizes the video and includes 17 suggested activities and discussion topics to enhance viewing.

112293\* (video)

112294 (teacher's guide)

[pubs.usgs.gov/gip/so\\_app/guide.pdf](http://pubs.usgs.gov/gip/so_app/guide.pdf)  
(teacher's guide)



#### **Birth of the Mountains: The Geologic Story of the Southern Appalachian Mountains**

This 23-page booklet begins with the earliest history recorded in the rocks and looks at the major stages in the development of the mountains and landscape. It shows where evidence can be seen today for each stage and gives examples of how the past affects human history and our lives today. This story is based on what geologists have discovered by mapping, measuring, and sampling rocks of this region. A companion video, "The Southern Appalachians: A Changing World," and a teacher's guide are also available.

112296

[pubs.usgs.gov/gip/birth/birth.pdf](http://pubs.usgs.gov/gip/birth/birth.pdf)

**Geologic Time**—This 20-page booklet explains relative and radiometric time scales and how geologists measure the age of the Earth. It illustrates the scien-

tific processes that are used to interpret the Earth's geologic history.

16520

[pubs.usgs.gov/gip/geotime/](http://pubs.usgs.gov/gip/geotime/)

**This Dynamic Earth: The Story of Plate Tectonics**—This colorfully illustrated 77-page booklet complements the poster entitled "This Dynamic Planet" and describes in detail the various aspects of plate tectonics.

16398\*

[pubs.usgs.gov/publications/text/dynamic.html](http://pubs.usgs.gov/publications/text/dynamic.html)

**This Dynamic Planet**—A world map of volcanoes, earthquakes, and plate tectonics. Complements "This Dynamic Earth: The Story of Plate Tectonics" booklet.

28946\*

[pubs.usgs.gov/pdf/planet.html](http://pubs.usgs.gov/pdf/planet.html)

**Interior of the Earth**—This leaflet gives explanations of the Earth's crust, mantle, and core with text and illustrations.

16438

[pubs.usgs.gov/gip/interior/](http://pubs.usgs.gov/gip/interior/)

**Fossils, Rocks, and Time**—This 24-page booklet explains the basics of how fossils are used in establishing time sequence in geology. Accompanies the poster, "Fossils Through Time."

16508

[pubs.usgs.gov/gip/fossils/](http://pubs.usgs.gov/gip/fossils/)

**Fossils Through Time**—This poster depicts the diversity and evolution of life on Earth during the last 600 million years, with photographs of fossils and corresponding explanations.

Accompanies the booklet, "Fossils, Rocks, and Time."

16564

**The Geology of Radon**—This 28-page booklet presents geologic information about radon, including how it forms, the kinds of rocks and soils it comes from, and how it moves through the ground or is carried by water. Geologists also explain in the booklet how they estimate the radon potential of an area.

16518

[energy.cr.usgs.gov:8080/radon/georadon.html](http://energy.cr.usgs.gov:8080/radon/georadon.html)

**Deserts: Geology and Resources**—This 60-page booklet describes various types of deserts (including extraterrestrial deserts), illustrates various desert features and eolian (wind) processes, and discusses the use of remote sensing in studying deserts and the process of desertification.

16504

[pubs.usgs.gov/gip/deserts/](http://pubs.usgs.gov/gip/deserts/)

#### **Building Stones of Our Nation's**

**Capital**—This 36-page booklet describes the source and appearance of many of the stones used in building Washington, D.C. A map and a walking guide are included.

16501

[pubs.usgs.gov/gip/stones/](http://pubs.usgs.gov/gip/stones/)

**Gold**—This 23-page booklet gives a brief history of gold mining through the ages around the world.

16431

[pubs.usgs.gov/gip/gold](http://pubs.usgs.gov/gip/gold)

**Natural Gemstones**—This 16-page booklet describes mineral and organic gemstones. It gives values of U.S. production of natural and synthetic minerals versus imports, as well as gemstone chemical formulas. Selected references are also supplied.

[pubs.usgs.gov/gip/gemstones/](http://pubs.usgs.gov/gip/gemstones/)

WEB ONLY

**A Tapestry of Time and Terrain**—A composite of the topography and the geology of the United States using a digital shaded-relief image showing the land surface by variations in brightness and the geologic map of King and Beikman. The 52 colors used show the geologic ages of rocks and surficial deposits at the Earth's surface. Accompanied by a pamphlet, which explains how the map was made and describes 48 physiographic features shown on the map.

28887\* (*map*)

28888 (*pamphlet*)

[tapestry.usgs.gov](http://tapestry.usgs.gov)

**Geology of the Solar System**—A two-sided poster with colorful geologic mapping and low-resolution, shaded-relief airbrush mapping of the terrestrial plan-

ets and outer satellites shown on one side and textual geologic information given on the reverse side.

28779\*

**Dinosaurs: Facts and Fiction**—This 10-page leaflet answers a series of basic questions on dinosaurs, such as "Where did dinosaurs live?" and "Why did dinosaurs grow so big?" References are also included.

16410

[pubs.usgs.gov/gip/dinosaurs/](http://pubs.usgs.gov/gip/dinosaurs/)

**Teaching Earth Science**—This CD-ROM contains 17 animated teaching tools separated into three categories: Geologic Processes; Earthquakes and Faulting; and Map Projections and Globes. The tools include an Earth and Tectonic Globes file, which is provided as a printable model. The minimum system requirements include a Macintosh or compatible computer with 68020 or higher processor, 8 Mb of RAM, Apple System Software version 7.0 or later, 13-inch color monitor, CD-ROM drive, and HyperCard Player 2.2 or higher viewing software.

18583\*

**Geology of the Conterminous United States at 1:2,500,000 Scale**—A digital representation of the 1974 P.B. King and H.M. Beikman Map.

18549\*

### **Real-Time Information**

#### **Center for Integration of Natural Disaster Information**—USGS.

This Web site provides links to real-time information on various hazards, such as earthquakes and wildfires.

[cindi.usgs.gov/](http://cindi.usgs.gov/)

**Real-Time Water Data**—USGS Water Resources Discipline. This Web site provides real-time hydrologic data from USGS gaging stations across the United States.

[water.usgs.gov/nwis/rt](http://water.usgs.gov/nwis/rt)

**Near Real Time Earthquake List**—USGS National Earthquake Information Center. This Web site gives the location,

depth, and magnitude of recent earthquake activity around the world.

[neic.usgs.gov/neis/bulletin/bulletin.html](http://neic.usgs.gov/neis/bulletin/bulletin.html)

**USGS Research Site for SF PORTS**—NOAA/USGS/California Office of Oil Spill Prevention and Response/Marine Exchange of San Francisco Bay. This Web site provides real-time observations for San Francisco Bay currents, tides, wind, and air temperature.

[sfports.wr.usgs.gov/sfports.html](http://sfports.wr.usgs.gov/sfports.html)

### **Information**

Call 1-888-ASK-USGS for pricing and ordering assistance.

Unless otherwise noted, all of the above publications are available from:

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Fax: (303) 202-4693  
[infoservices@usgs.gov](mailto:infoservices@usgs.gov)

When ordering, please include the title of the publication and the stock number that follows each publication description.

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For additional information, visit the [ask.usgs.gov](http://ask.usgs.gov) Web site or the USGS home page at [www.usgs.gov](http://www.usgs.gov).